

INTERNET DOCUMENT INFORMATION FORM

A . Report Title: Innovation in Non-Lethal Weapon Technology

B. DATE Report Downloaded From the Internet 8/18/98

C. Report's Point of Contact: (Name, Organization, Address, Office Symbol, & Ph #): ZARC International, Inc
ATTN: Cameron Logman
(301) 564-3737
P.O. Box 5800
Bethesda, MD 20824

D. Currently Applicable Classification Level: Unclassified

E. Distribution Statement A: Approved for Public Release

F. The foregoing information was compiled and provided by:
DTIC-OCA, Initials: um **Preparation Date:** 8/19/98

The foregoing information should exactly correspond to the Title, Report Number, and the Date on the accompanying report document. If there are mismatches, or other questions, contact the above OCA Representative for resolution.

19980820 060



ZARC INTERNATIONAL, INC.

PO BOX 5800, BETHESDA, MD 20824, U.S.A.
(301) 564-3737 FAX (301) 897-5220

CAP-STUN[®]
WEAPON SYSTEMS

ZARC[®] INTERNATIONAL, INC.

Innovation in Non-Lethal Weapon Technology

By: Cameron Logman

ZARC[®] is the founder of Oleoresin Capsicum (OC Pepper Agent) non-lethal weapon technology. This proprietary OC technology is currently packaged in an aerosol form under the recognized brandname **CAP-STUN[®]**, the very first pepper spray on the market developed for law enforcement and military application.

ZARC's client list includes more than three thousand state and local law enforcement agencies as well as the US Air Force, FBI, US Marshals Service, Drug Enforcement Administration, US Park Police, Secret Service and other US federal agencies.

This paper will provide an overview of the current existing CAP-STUN[®] products and also furnish a brief description of a technological leap being undertaken at ZARC[®], in order to develop systems for use by modern military.

CAP-STUN[®]

CAP-STUN[®]'s technology is a unique compound and dispersion method currently in an aerosol form used by police and military to incapacitate unruly subject(s). CAP-STUN[®] is comprised of **Capsaicinoids** ingredients. (Capsaicinoids are active ingredients within species of capsicum peppers (chili), which properly manipulated can become a potent medium to disable the target.)

AQ I 98-11-2300



ZARC INTERNATIONAL, INC.

PO BOX 5800, BETHESDA, MD 20824, U.S.A.
(301) 564-3737 FAX (301) 897-5220

CAP-STUN
WEAPON SYSTEMS

Law enforcement and military have come to rely on CAP-STUN®'s unique advantages because CAP-STUN® provides:

- instantaneous control over violent or emotionally disturbed subjects,
- immediate impact on those under the influence of narcotics or alcohol,
- effective crowd control,
- the reduction of escalation to higher levels of force.

CAP-STUN®'s unique formulation and unmatched high performance record have been invaluable assets to law enforcement and military. Many incidents that previously would have led to violence have been prevented by the use of CAP-STUN® with a resulting decrease in injuries to subjects and officers and a reduction in civil litigation.

CAP-STUN® has a documented 95% effective rate, due to its unmatched Capsaicinoids content and dispersion technology. This is in drastic contrast to "civilian" pepper sprays with a 58% effective rate and numerous failures with documented injuries to subject and police officers.

CAP-STUN®'s Effects

CAP-STUN® produces **inflammation of the mucous membranes** which lasts for up to 45 minutes with no after-effects. This immediate inflammation is the key difference between CAP-STUN's and other chemical agents and tear-gases. CAP-STUN® effects are:

- Immediate closing of the eyes.
- Coughing.



ZARC INTERNATIONAL, INC.

PO BOX 5800, BETHESDA, MD 20824, U.S.A.
(301) 564-3737 FAX (301) 897-5220

CAP-STUN
WEAPON SYSTEMS

CAP-STUN® IS SAFE

CAP-STUN® has undergone extensive independent toxicological testing. In over 10 years and tens of thousands of actual employment, there has not been a single substantiated instance of adverse reaction to CAP-STUN® by any subject, including those with respiratory illnesses, heart problems, poor reflexes or allergies.

CAP-STUN® in U.S. Department of Defense

ZARC® currently markets CAP-STUN® under various National Stock Numbers (examples: NSN 1365014073182 and 1365014076548).

The US military has used CAP-STUN® in several of its highly publicized peace-keeping missions including Rwanda and Guantanamo Bay. Military police from the U.S. Army 10th Mountain Division and 82nd Airborne Division as well as the U.S. Marine Corps 1st Marine Expeditionary Force have also used CAP-STUN® during operations in Haiti and Somalia.

In 1995, CAP-STUN® was adopted by military police units throughout DOD. The Air Force has made CAP-STUN® standard issue for its security police and Office of Special Investigations.



ZARC INTERNATIONAL, INC.

PO BOX 5800, BETHESDA, MD 20824, U.S.A.
(301) 564-3737 FAX (301) 897-5220



The Navy utilizes CAP-STUN® for its Shore Patrol units in various Naval commands. Army and Marine military police units have been trained in the use of CAP-STUN® in several special sessions conducted at the Ft. MacClellan training facility. Primary US military police trainers, stationed throughout the world, participated in the training sessions conducted by ZARC®'s Director of Training. Additional military training sessions have been held at Miramar Naval Air Station, Travis Air Force Base, Andrews Air Force Base, and at the Defense Logistics Agency's training facility at Ft. Belvoir.

Non-Lethal vs. Less-Than-Lethal

ZARC® sees a clear difference between less-than-lethal and non-lethal weapons. Less-Than-Lethal Weapons are designed to minimize fatalities. There are various less-than-lethal weapons available. Projectiles such as rubber bullets, bean bags, sticky foam are categorized as less than lethal due to their high potential for serious injury and death. For example actual instances of fatalities caused by bean bags have been reported in Canada.

Non-Lethal-Weapons however, must be designed to incapacitate the subject, and properly used, should result in no injuries, fatalities or after effects.

ZARC® attempt is therefore to develop systems that are non-lethal in nature, bridging the gap that exist between police and military application of OC, and therefore satisfying the demands of the modern soldier, by utilizing their current platform of arms as well as providing new ones that are truly non-lethal.



ZARC INTERNATIONAL, INC.

PO BOX 5800, BETHESDA, MD 20824, U.S.A.
(301) 564-3737 FAX (301) 897-5220

CAP-STUN
WEAPON SYSTEMS

Technology Development

ZARC® is currently developing a more effective means of using CAP-STUN® in a non aerosol form.

All systems being developed by ZARC® are based on modified versions of ZARC®'s proprietary Capsaicinoids technology designed to be projected in a variety of devices in order to bring about temporary incapacitation without any adverse effects. Contact with these systems will cause rapid physiological reactions such as instant closing of the eyes and respiratory difficulty in targeted humans and animals. All technologies defined herein are in working concept and design development stage.

Types of Missions

Today's soldier must be equipped for peace-keeping and operations other than war, where civilians and non-combatants are present. The U.S. forces now will have to respond to a myriad of situations including urban warfare, across the range of military operations. At the same time, the military will face increased media attention, worldwide environmental concerns, and a low national tolerance for lethal and costly campaigns.



ZARC INTERNATIONAL, INC.

PO BOX 5800, BETHESDA, MD 20824, U.S.A.
(301) 564-3737 FAX (301) 897-5220

CAP-STUN
WEAPON SYSTEMS

Political, diplomatic, economic and humanitarian demands dictate that future operations, where possible, minimize U.S. casualties while limiting collateral civilian casualties. Global demand for non-lethal weapons is ever increasing because of:

- High cost of lethal force application.
- Peacekeeping operations.
- Humanitarian concerns.
- Pressures by human right organizations.
- Pressures by global media coverage.
- The need to minimize casualties.
- The need to minimize damage to properties.
- Operations other than war.
- Change of social consciousness to peaceful conflict resolution.

System Concepts

The systems that are being developed by ZARC® are designed for employment in the following Anti-Personnel applications:

- Close Proximity Encounters.
- Fleeing Suspects on foot.
- Hostage Situation.
- Crowd Control and Civil Disturbance.
- Barricaded subject and area/structure clearance.
- Non-compliant prisoner cell extraction.
- Animal and dog control.



ZARC INTERNATIONAL, INC.

PO BOX 5800, BETHESDA, MD 20824, U.S.A.
(301) 564-3737 FAX (301) 897-5220

CAP-STUN
WEAPON SYSTEMS

ZARC® will be developing three specific systems as follows. All systems are lightweight, portable and easy to use and maintain:

System 1 (Close Proximity Device): Pocket size, target precise, multiple shot, non-aerosol system, for indoor and outdoor application. Capsaicinoids projectile designed to be employed on one or several subjects at close distances of up to 33 feet (10 meters).

System 2 (Medium Range Expulsion Projectile): Capsaicinoids projectile standoff device, capable of covering a small or large area, projected up to 200 feet (60 meters) for immediate control and dispersal of crowds. Device will be effective against individual or crowds.

System 3 (Long Range): Capsaicinoids projectiles, designed to be launched from a variety of existing weapon platforms up to 600 feet (200 meters) without injuries to the subject or bystanders. This technology is designed to be projected to a human target, with an aim to subdue and control the subject without any injury. The projectile will be designed to be used in Large Riots, Hostage Situations, Fleeting suspect on foot, non-complying suspect and animal control, when the subject(s) must be controlled accurately from a distance.

The above systems will respond to the ever increasing demands for non-lethal force application for military use.

Cameron Logman is the President and CEO of ZARC®. Mr. Logman is recognized as the nation's foremost expert on Oleoresin Capsicum Weaponry and has written and lectured widely on the subjects. Publications authored by Mr. Logman continue to be some of the most significant writings on Oleoresin Capsicum Weaponry worldwide.